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C*-Algebras generated by mappings

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Abstract

In the paper, some properties of a singly generated C*-subalgebra of the algebra of all bounded operators B(l2(X)) on the Hilbert space l2(X) with the generator Tφ induced by a mapping φ of an infinite set X into itself are investigated. A condition on φ is presented under which the operator Tφ is continuous, and it is proved that, if this is the case, then the study of these algebras can be reduced to that of C*-algebras generated by a finite family of partial isometries of a special form. A complete description of the C*-algebras generated by an injective mapping on X is given. Examples of C*-algebras generated by noninjective mappings are treated. © 2010 Pleiades Publishing, Ltd.

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Keywords

C*-algebra, C*-algebra generated by a mapping, Cuntz algebra, Injective mapping, Partial isometry, Toeplitz algebra